

REMARKS

Objections to Drawings under 37 CFR 1.83(a)

FIG. 6 stands objected to as illustrating only that which is old. Applicant has amended FIG. 6 to include the legend "Prior Art." Reconsideration and withdrawal of the objection is respectfully requested.

The drawings stand objected to under 37 CFR 1.83(a). Specifically, the Examiner has requested the gap and half structures of lines 28 and 29 of page 7 be illustrated, the crossed plies of line 25 and the angles set forth in line 26 of page 8 be illustrated, and that the pitch p of line 2, page 10 be illustrated.

Applicant has presented a new FIG. 1B to illustrate belts of a tire.

As to the carcass structure 8, Applicant has shown a carcass structure in FIG. 1A, indicated by reference number "8." Applicant claims a carcass structure broadly and illustrates a carcass structure in FIG. 1B. While Applicant describes two examples of carcass structures in the specification, Applicant broadly claims a carcass structure, which would include any carcass structure known to one having ordinary skill in the art. Therefore, Applicant respectfully asserts that the structural detail essential for a proper understanding of the claimed invention is shown in the drawings and further drawings that could indicate an intent to limit the invention to carcass structures illustrated is not essential to an understanding of the claimed invention. Therefore, reconsideration and withdrawal of the objection is respectfully requested.

As to the pitch p, p is defined in the specification as a mathematical equation. The specification discloses that p, as applied to substantially circumferentially oriented cord that is wound helically particularly in a large-diameter helical having as its main axis the main axis of the tire, is the transverse distance between the cord axes of the cords of two adjacent loops in the helical. "Laying density, d" is further disclosed as being the reciprocal of the winding pitch and thus corresponds to the number of loops of a helically wound cord per unit axial length. (See, Specification., p. 7. lines 1-6). As the specification further discloses, customarily d is stated as the number of cords per decimeter (units of 1/dm) and pi is stated in units of millimeters. Thus $p=100/d$. *Id.* Applicant respectfully asserts that this definition is well understood by one having ordinary skill in the art and is not **structure** that is essential for a proper understanding of the

claimed invention unless it is illustrated. Therefore, reconsideration and withdrawal of the objection is respectfully requested.

Objections to the Specification under 37 CFR 1.75(d)(1)

The specification stands objected to under 37 CFR 1.75(d)(1) as failing to provide proper antecedent basis for the claimed subject matter. Applicant has amended the specification to specifically include reference to a “first” and a “second” crown reinforcement in the description of one embodiment of the claimed invention as shown in FIG. 1A. Reconsideration and withdrawal of the objection is respectfully requested.

Rejections under 35 U.S.C. § 112

Claims 1-11 and 13-30 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention.

Specifically, claim 1 stands rejected because the Examiner states that the terms “high strain,” “high temperature,” “low strain” and “moderate temperature” are indefinite as it is not clear how much strain or how high or how low a temperature is encompassed by each of these terms.

Applicant has amended claim 1 to include the limitation of “a strain of 2.3% and a temperature of 180 °C” and “a strain of 1% at 80 °C” to replace the terms “high strain,” “high temperature,” “low strain” and “moderate temperature.” Support for this amendment may be found on page 4, lines 13-20 of the specification.

Specifically addressing the rejection of claim 13, Applicant has amended this claim, as well as claim 1, to replace the term “at high stress” to “at 4 % strain.” Support for this amendment may be found on pages 10 – 12 with the explanation of FIG. 8. For example, the nylon-aramid hybrid material is described on page 11 as having an initial modulus (low strain and low stress) of 740 cN/tex and further, that at a 4 % elongation, has a stress of 50 cN/tex with a modulus of elasticity of 1250 cN/tex. The specification describes this material as having a medium modulus of elasticity at low elongation but a high modulus at high stress or elongation.

Specifically addressing the rejection of claims 16-18 and 22 for use of the word “preferably” in the claims, Applicant has amended these claims to remove the word “preferably.” Reconsideration and withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C § 103(a)

Claims 1-6 and 13-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,968,295 of Kohno, *et al.* Kohno discloses a tire comprising a circumferential belt layer in addition to a slant belt layer in which specified PET, nylon, PEN or vinyl fiber cords or steel cords are used in the circumferential belt layer. (Kohno, Abstract).

Applicant claims a tire comprising, *inter alia*, a crown having a reinforcing ply, a first crown reinforcement having organic fiber cords and a second crown reinforcement having a ratio τ inferior to 1.5. (Claim 1).

To establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

Applicant respectfully asserts that a *prima facie* case of obviousness has not been presented because the cited prior art references fails to teach or suggest all the claim limitations of pending claim 1. Specifically, the cited prior art references fail to teach that the two crown reinforcements are of differing materials.

Kohno teaches that the cord used in the circumferential belt may be PET, nylon, PEN or vinyl fiber. (Kohno, col. 2, lines 18-20). Kohno further teaches that the cord to be used in the circumferential belt layer 7 can properly be selected from the group consisting of PET fiber cord, nylon fiber cord, PEN fiber cord, vinyl fiber cord and steel cord in accordance with the purpose of use. (Kohno, col. 4, lines 41-45). Kohno further teaches that the cord for the circumferential belt layer 7 is PET fiber cords, nylon fiber cords, PEN fiber cords, vinyl fiber cords or steel cords. (Kohno, col. 3, lines 55-57). Kohno teaches that at least one circumferential belt layer 7 containing a plurality of cords arranged substantially in parallel to the equatorial plane 5 is disposed on the slant belt layer 6.

Therefore, while Kohno teaches that the circumferential belt layer may include multiple layers, Kohno **does not teach that these layers of belts should be of different materials.**

Instead, Kohno teaches that these belts should be of the same material, whatever the selected material may be for use.

The Examiner points out that Kohno teaches a first crown reinforcement 7-1 and a second crown reinforcement 7-2 and relates these layers to be similar to Applicant's claimed first and second crown reinforcements. However, the circumferential belt layers of Kohno are disclosed as being of the same material though that same material may vary depending on the use. Kohno does not teach or suggest that these materials may be different for the two layers. Indeed, the reason Kohno discloses the use of two layers is to control separation failure at the belt end. (Kohno, col. 5, line 38 to col. 6, line 18). Kohno does not suggest or teach any advantage or possibility for making the layers of different materials instead disclosing only that the *belts be made of one material only* selected from a wide array of different materials.

Therefore, because Kohno fails to teach or suggest each and every limitation claimed by Applicant in independent claim 1, specifically teaching that two crown reinforcements be made of different materials, Applicant respectfully requests reconsideration and withdrawal of the rejection of independent claim 1 as well as each claim depending therefrom.

Applicant respectfully asserts that all claims are now in condition for allowance and requests the timely issuance of the Notice of Allowance. If the Examiner believes that a telephone interview would expedite the examination of this pending patent application, the Examiner is invited to telephone the below signed attorney at the convenience of the Examiner. In the event there are any fees or charges associated with the filing of these documents, the Commissioner is authorized to charge Deposit Account No. 13-3085 for any necessary amount.

Respectfully submitted,

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